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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,665

02/04/2005

Ken Tsuzuki

14321.64

8452

22913

7590

12/06/2006

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EXAMINER

THOMPSON, TIMOTHY J

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/523,665

Applicant(s)

TSUZUKI ET AL.

Examiner

Timothy J. Thompson

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

Claims 1-4 are objected to because of the following informalities: They do not include closed or open language such as "consisting of" or "comprising". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Noda et al.(U.S. Pat. No. 4,811,353).

Regarding claim 1, Noda et al. discloses a semiconductor optical modulator having a layered structure in which a semi-insulating type cladding layer(fig 5, 4), a semiconductor optical waveguide core layer(fig 5, 3), and a semi-insulating type cladding layer are sequentially laminated on a substrate(fig 5, 8), a part of at least one of the semi-insulating type cladding layers including a surface opposite from a laminated surface with the semiconductor optical waveguide core layer is an n-type cladding layer,

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or all of at least one of the semi-insulating type cladding layers is an n-type cladding layer(col 1, lines 50-68).

Regarding claim 2, Noda et al. discloses the modulator has a waveguide structure that is a high-mesa waveguide structure or a ridge waveguide structure(fig 5).

Claims 1-3, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu(U.S. Pat. No. 6,122,414).

Regarding claim 1, Shimizu discloses a semiconductor optical modulator having a layered structure in which a semi-insulating type cladding layer(fig 7B, 2a-2), a semiconductor optical waveguide core layer(fig 7B, 3-2), and a semi-insulating type cladding layer(fig 7B, 5-2) are sequentially laminated on a substrate(fig 7B, 1), a part of at least one of the semi-insulating type cladding layers including a surface opposite from a laminated surface with the semiconductor optical waveguide core layer is an n-type cladding layer, or all of at least one of the semi-insulating type cladding layers is an n-type cladding layer(col 5, lines 14-25).

Regarding claim 2, Shimizu discloses the modulator has a waveguide structure that is a high-mesa waveguide structure or a ridge waveguide structure(fig 7B).

Regarding claim 3, Noda et al. discloses in that electrodes(fig 7B, 13-2, 13-3) are respectively connected to the n-type cladding layer(fig 7B, 2a-2) or the semi-insulating type cladding layer placed directly on the substrate(fig 7B, 1) and to the n-type cladding layer or the semi-insulating type cladding layer(fig 7B, 5-2) including a

surface opposite from a laminated surface with the semiconductor optical waveguide core(fig 7B, 3-2) layer laminated on the substrate.

Regarding claim 5, Noda et al. discloses an optical splitter by which input light is split into two light beams, and an optical coupler by which light beams modulated by the semiconductor optical modulator are combined together(fig 7A).

Allowable Subject Matter

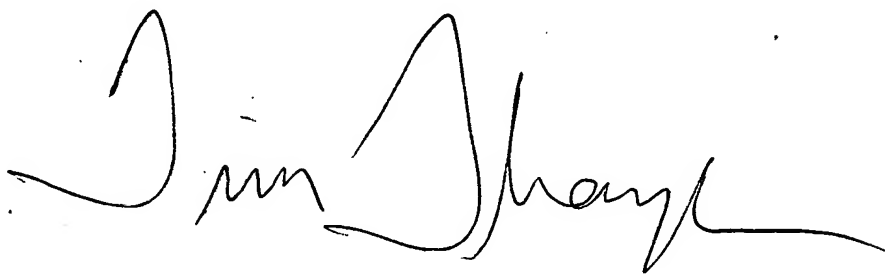
Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The allowable feature being the electrodes are coplanar.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (571) 272-2342. The examiner can normally be reached on 8:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on (571) 272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Tim Thompson", with a stylized, flowing script.

**TIMOTHY THOMPSON
PRIMARY EXAMINER**